SEQUENCE LISTING

<110> SAUNDERS, SCOTT
BERNFIELD, MERTON
KATO, MASATO

<120> CONSTRUCTION AND USE OF SYNTHETIC CONSTRUCTS ENCODING SYNDECAN

<130> 101353-232

<140> Herewith
<141> 2004-02-11

<150> 09/723,677
<151> 2000-11-28

<150> 08/471,970
<151> 1995-06-06

<150> 08/078,683
<151> 1993-06-17

<150> 07/856,869
<151> 1992-03-24

<150> 07/757,654
<151> 1991-09-06

<150> 07/746,797
<151> 1991-08-12

<150> 07/331,585
<151> 1989-03-29

<160> 46

<170> PatentIn version 3.0

<210> 1
<211> 2432
<212> DNA
<213> MUS SP

<400> 1
actccgcggg agaggtgcgg gccagaggag acagagccta acgcagagga agggacctgg 60

cagtcgggag ctgactccag ccggcgaaac ctacagccct cgctcgagag agcagcgagc 120

tgggcaggag cctgggacag caaagcgcag agcaatcagc agagccggcc cggagctccg 180

tgcaaccggc aactcggatc cacgaagccc accgagctcc cgccgccggt ctgggcagca 240

tgagacgcgc ggcgctctgg ctctggctct gcgcgctggc gctgcgcctg cagcctgccc 300

tcccgcaaat tgtggctgta aatgttcctc ctgaagatca ggatggctct ggggatgact 360

ctgacaactt ctctggctct ggcacaggtg ctttgccaga tactttgtca cggcagacac 420

cttccacttg gaaggacgtg tggctgttga cagccacgcc cacagctcca gagcccacca 480

gcagcaacac cgagactgct tttacctctg tcctgccagc cggagagaag cccgaggagg 540

gagagcctgt gctccatgta gaagcagagc ctggcttcac tgctcgggac aaggaaaagg 600

aggtcaccac caggcccagg gagaccgtgc agctccccat cacccaacgg gcctcaacag 660
tcagagtcac cacagcccag gcagctgtca catctcatcc gcacgggggc atgcaacctg 720
gcctccatga gacctcggct cccacagcac ctggtcaacc tgaccatcag cctccacgtg 780
tggagggtgg cggcacttct gtcatcaaag aggttgtcga ggatggaact gccaatcagc 840
ttcccgcagg agagggctct ggagaacaag acttcacctt tgaaacatct ggggagaaca 900
cagctgtggc tgccgtagag cccggcctgc ggaatcagcc cccggtggac gaaggagcca 960
caggtgcttc tcagagcctt ttggacagga aggaagtgct gggaggtgtc attgccggag 1020
gcctagtggg cctcatcttt gctgtgtgcc tggtggcttt catgctgtac cggatgaaga 1080
agaaggacga aggcagctac tccttggagg agcccaaaca agccaatggc ggtgcctacc 1140
agaaacccac caagcaggag gagttctacg cctgatgggg aaatagttct ttctcccccc 1200
cacagcccct gccactcact aggctcccac ttgcctcttc tgtgaaaaac ttcaagccct 1260
ggcctcccca ccactgggtc atgtcctctg cacccaggcc cttccagctg ttcctgcccg 1320
agcggtccca gggtgtgctg ggaactgatt cccctccttt gacttctgcc tagaagcttg 1380
ggtgcaaagg gtttcttgca tctgatcttt ctaccacaac cacacctgtc gtccactctt 1440
ctgacttggt ttctccaaat gggaggagac ccagctctgg acagaaaggg gacccgactg 1500
ctttggacct agatggccta ttgcggctgg aggatcctga ggacaggaga ggggcttcgg 1560
ctgaccagcc atagcactta cccatagaga ccgctagggt tggccgtgct gtggtggggg 1620
atggaggcct gagctccttg gaatccactt ttcattgtgg ggaggtctac tttagacaac 1680
ttggttttgc acatattttc tctaatttct ctgttcagag ccccagcaga ccttattact 1740
ggggtaaggc aagtctgttg actggtgtcc ctcacctcgc ttccctaatc tacattcagg 1800
agaccgaatc gggggttaat aagacttttt ttgtttttg tttttgtttt taacctagaa 1860
gaaccaaatc tggacgccaa aacgtaggct tagtttgtgt gttgtctctg agtttgtgct 1920
catgcgtaca acagggtatg gactatctgt atggtgcccc atttttggcg gcccgtaagt 1980
aggctaggct agtccaggat actgtggaat agccacctct tgaccagtca tgcctgtgtg 2040
catggactca gggccacggc cttggcctgg gccaccgtga cattggaaga gcctgtgtga 2100
gaacttactc gaagttcaca gtctaggagt ggaggggagg agactgtaga gttttggggg 2160
aggggtagca agggtgccca agcgtctccc acctttggta ccatctctag tcatccttcc 2220
tcccggaagt tgacaagaca catcttgagt atggctggca ctggttcctc catcaagaac 2280
caagttcacc ttcagctcct gtggccccgc ccccaggctg gagtcagaaa tgtttcccaa 2340
agagtgagtc ttttgctttt ggcaaaacgc tacttaatcc aatgggttct gtacagtaga 2400
ttttgcagat gtaataaact ttaatataaa gg 2432

<210> 2
<211> 311
<212> PRT
<213> MUS SP

<400> 2

```
Met Arg Arg Ala Ala Leu Trp Leu Trp Leu Cys Ala Leu Ala Leu Arg
1               5                  10                  15

Leu Gln Pro Ala Leu Pro Gln Ile Val Ala Val Asn Val Pro Pro Glu
            20                  25                  30

Asp Gln Asp Gly Ser Gly Asp Asp Ser Asp Asn Phe Ser Gly Ser Gly
        35                  40                  45

Thr Gly Ala Leu Pro Asp Thr Leu Ser Arg Gln Thr Pro Ser Thr Trp
    50                  55                  60

Lys Asp Val Trp Leu Leu Thr Ala Thr Pro Thr Ala Pro Glu Pro Thr
65                  70                  75                  80

Ser Ser Asn Thr Glu Thr Ala Phe Thr Ser Val Leu Pro Ala Gly Glu
                85                  90                  95

Lys Pro Glu Glu Gly Glu Pro Val Leu His Val Glu Ala Glu Pro Gly
            100                 105                 110

Phe Thr Ala Arg Asp Lys Glu Lys Glu Val Thr Thr Arg Pro Arg Glu
        115                 120                 125

Thr Val Gln Leu Pro Ile Thr Gln Arg Ala Ser Thr Val Arg Val Thr
    130                 135                 140

Thr Ala Gln Ala Ala Val Thr Ser His Pro His Gly Gly Met Gln Pro
145                 150                 155                 160

Gly Leu His Glu Thr Ser Ala Pro Thr Ala Pro Gly Gln Pro Asp His
                165                 170                 175

Gln Pro Pro Arg Val Glu Gly Gly Gly Thr Ser Val Ile Lys Glu Val
            180                 185                 190

Val Glu Asp Gly Thr Ala Asn Gln Leu Pro Ala Gly Glu Gly Ser Gly
        195                 200                 205

Glu Gln Asp Phe Thr Phe Glu Thr Ser Gly Glu Asn Thr Ala Val Ala
    210                 215                 220

Ala Val Glu Pro Gly Leu Arg Asn Gln Pro Pro Val Asp Glu Gly Ala
225                 230                 235                 240

Thr Gly Ala Ser Gln Ser Leu Leu Asp Arg Lys Glu Val Leu Gly Gly
                245                 250                 255

Val Ile Ala Gly Gly Leu Val Gly Leu Ile Phe Ala Val Cys Leu Val
            260                 265                 270

Ala Phe Met Leu Tyr Arg Met Lys Lys Lys Asp Glu Gly Ser Tyr Ser
        275                 280                 285

Leu Glu Glu Pro Lys Gln Ala Asn Gly Gly Ala Tyr Gln Lys Pro Thr
```

290 295 300

Lys Gln Glu Glu Phe Tyr Ala
305 310

<210> 3
<211> 310
<212> PRT
<213> HOMO SAPIENS

<400> 3

Met Arg Arg Ala Ala Leu Trp Leu Trp Leu Cys Ala Leu Ala Leu Ser
1 5 10 15

Leu Gln Leu Ala Leu Pro Gln Ile Val Ala Thr Asn Ile Pro Pro Glu
20 25 30

Asp Gln Asp Gly Ser Gly Asp Asp Ser Asp Asn Phe Ser Gly Ser Gly
35 40 45

Ala Gly Ala Leu Gln Asp Ile Thr Leu Ser Gln Gln Thr Pro Ser Thr
50 55 60

Trp Lys Asp Thr Gln Leu Leu Thr Ala Ile Pro Thr Ser Pro Glu Pro
65 70 75 80

Thr Gly Leu Glu Ala Thr Ala Ala Ser Thr Ser Thr Leu Pro Ala Gly
85 90 95

Glu Gly Pro Lys Glu Gly Glu Ala Val Val Leu Pro Glu Val Glu Pro
100 105 110

Gly Leu Thr Ala Arg Glu Gln Glu Ala Thr Pro Arg Pro Arg Glu Thr
115 120 125

Thr Gln Leu Pro Thr Thr His Gln Ala Ser Thr Thr Thr Ala Thr Thr
130 135 140

Ala Gln Glu Pro Ala Thr Ser His Pro His Arg Asp Met Gln Pro Gly
145 150 155 160

His His Glu Thr Ser Thr Pro Ala Gly Pro Ser Gln Ala Asp Leu His
165 170 175

Thr Pro His Thr Glu Asp Gly Gly Pro Ser Ala Thr Glu Arg Ala Ala
180 185 190

Glu Asp Gly Ala Ser Ser Gln Leu Pro Ala Ala Glu Gly Ser Gly Glu
195 200 205

Gln Asp Phe Thr Phe Glu Thr Ser Gly Glu Asn Thr Ala Val Val Ala
210 215 220

Val Glu Pro Asp Arg Arg Asn Gln Ser Pro Val Asp Gln Gly Ala Thr
225 230 235 240

Gly Ala Ser Gln Gly Leu Leu Asp Arg Lys Glu Val Leu Gly Gly Val
245 250 255

Ile Ala Gly Gly Leu Val Gly Leu Ile Phe Ala Val Cys Leu Val Gly
260 265 270

```
Phe Met Leu Tyr Arg Met Lys Lys Lys Asp Glu Gly Ser Tyr Ser Leu
        275                 280                 285

Glu Glu Pro Lys Gln Ala Asn Gly Gly Ala Tyr Gln Lys Pro Thr Lys
    290                 295                 300

Gln Glu Glu Phe Tyr Ala
305                 310
```

<210> 4
<211> 313
<212> PRT
<213> RATTUS RATTUS

<400> 4

```
Met Arg Arg Ala Ala Leu Trp Leu Trp Leu Cys Ala Leu Ala Leu Arg
1               5                   10                  15

Leu Gln Pro Ala Leu Pro Gln Ile Val Thr Ala Asn Val Pro Pro Glu
            20                  25                  30

Asp Gln Asp Gly Ser Gly Asp Asp Ser Asp Asn Phe Ser Gly Ser Gly
        35                  40                  45

Thr Gly Ala Leu Pro Asp Met Thr Leu Ser Arg Gln Thr Pro Ser Thr
    50                  55                  60

Trp Lys Asp Val Trp Leu Leu Thr Ala Thr Pro Thr Ala Pro Glu Pro
65                  70                  75                  80

Thr Ser Arg Asp Thr Glu Ala Thr Leu Thr Ser Ile Leu Pro Ala Gly
                85                  90                  95

Glu Lys Pro Glu Glu Gly Glu Pro Val Ala His Val Glu Ala Glu Pro
            100                 105                 110

Asp Phe Thr Ala Arg Asp Lys Glu Lys Glu Ala Thr Thr Arg Pro Arg
        115                 120                 125

Glu Thr Thr Gln Leu Pro Val Thr Gln Gln Ala Ser Thr Ala Ala Arg
    130                 135                 140

Ala Thr Thr Ala Gln Ala Ser Val Thr Ser His Pro His Gly Asp Val
145                 150                 155                 160

Gln Pro Gly Leu His Glu Thr Leu Ala Pro Thr Ala Pro Gly Gln Pro
                165                 170                 175

Asp His Gln Pro Pro Ser Val Glu Asp Gly Gly Thr Ser Val Ile Lys
            180                 185                 190

Glu Val Val Glu Asp Glu Thr Thr Asn Gln Leu Pro Ala Gly Glu Gly
        195                 200                 205

Ser Gly Glu Gln Asp Phe Thr Phe Glu Thr Ser Gly Glu Asn Thr Ala
    210                 215                 220

Val Ala Gly Val Glu Pro Asp Leu Arg Asn Gln Ser Pro Val Asp Glu
225                 230                 235                 240

Gly Ala Thr Gly Ala Ser Gln Gly Leu Leu Asp Arg Lys Glu Val Leu
                245                 250                 255
```

```
Gly Gly Val Ile Ala Gly Gly Leu Val Gly Leu Ile Phe Ala Val Cys
            260                 265                 270

Leu Val Ala Phe Met Leu Tyr Arg Met Lys Lys Lys Asp Glu Gly Ser
        275                 280                 285

Tyr Ser Leu Glu Glu Pro Lys Gln Ala Asn Gly Gly Ala Tyr Gln Lys
    290                 295                 300

Pro Thr Lys Gln Glu Glu Phe Tyr Ala
305                 310
```

<210> 5
<211> 309
<212> PRT
<213> HAMSTER SP

<400> 5

```
Met Arg Arg Ala Ala Leu Trp Leu Trp Leu Cys Ala Leu Ala Leu Arg
1               5                   10                  15

Leu Gln Pro Val Leu Pro Gln Ile Val Thr Val Asn Val Pro Pro Glu
            20                  25                  30

Asp Gln Asp Gly Ser Gly Asp Asp Ser Asp Asn Phe Ser Gly Ser Gly
        35                  40                  45

Thr Gly Ala Leu Pro Asp Ile Thr Leu Ser Arg Gln Ala Ser Pro Thr
    50                  55                  60

Leu Lys Asp Val Trp Leu Leu Thr Ala Thr Pro Thr Ala Pro Glu Pro
65                  70                  75                  80

Thr Ser Arg Asp Ala Gln Ala Thr Thr Thr Ser Ile Leu Pro Ala Ala
                85                  90                  95

Glu Lys Pro Gly Glu Gly Glu Pro Val Leu Thr Ala Glu Val Asp Pro
            100                 105                 110

Gly Phe Thr Ala Arg Asp Lys Glu Ser Glu Val Thr Thr Arg Pro Arg
        115                 120                 125

Glu Thr Thr Gln Leu Leu Ile Thr His Trp Val Ser Thr Ala Arg Ala
    130                 135                 140

Thr Thr Ala Gln Ala Pro Val Thr Ser His Pro His Arg Asp Val Gln
145                 150                 155                 160

Pro Gly Leu His Glu Thr Ser Ala Pro Thr Ala Pro Gly Gln Pro Asp
                165                 170                 175

Gln Gln Pro Pro Ser Gly Gly Thr Ser Val Ile Lys Glu Val Ala Glu
            180                 185                 190

Asp Gly Ala Thr Asn Gln Leu Pro Thr Gly Glu Gly Ser Gly Glu Gln
        195                 200                 205

Asp Phe Thr Phe Glu Thr Ser Gly Glu Asn Thr Ala Val Ala Ala Val
    210                 215                 220

Glu Pro Asp Gln Arg Asn Gln Pro Pro Val Asp Glu Gly Ala Thr Gly
```

225 230 235 240

Ala Ser Gln Gly Leu Leu Asp Arg Lys Glu Val Leu Gly Gly Val Ile
245 250 255

Ala Gly Gly Leu Val Gly Leu Ile Phe Ala Val Cys Leu Val Gly Phe
260 265 270

Met Leu Tyr Arg Met Lys Lys Lys Asp Glu Gly Ser Tyr Ser Leu Glu
275 280 285

Glu Pro Lys Gln Ala Asn Gly Gly Ala Tyr Gln Lys Pro Thr Lys Gln
290 295 300

Glu Glu Phe Tyr Ala
305

<210> 6
<211> 125
<212> PRT
<213> HOMO SAPIEN

<400> 6

Glu Ser Leu Arg Glu Thr Glu Val Ile Asp Pro Gln Asp Leu Leu Glu
1 5 10 15

Gly Arg Tyr Phe Ser Gly Ala Leu Pro Asp Asp Glu Asp Val Val Gly
20 25 30

Pro Gly Gln Glu Ser Asp Asp Phe Glu Leu Ser Gly Ser Gly Asp Leu
35 40 45

Asp Asp Leu Glu Asp Ser Met Ile Gly Pro Glu Val Val His Pro Leu
50 55 60

Val Pro Leu Asp Asn His Ile Pro Glu Arg Ala Gly Ser Gly Ser Gln
65 70 75 80

Val Pro Thr Glu Pro Lys Lys Leu Glu Glu Asn Glu Val Ile Pro Lys
85 90 95

Arg Ile Ser Pro Val Glu Glu Ser Glu Asp Val Ser Asn Lys Val Ser
100 105 110

Met Ser Ser Thr Val Gln Gly Ser Asn Ile Phe Glu Arg
115 120 125

<210> 7
<211> 44
<212> PRT
<213> RATTUS RATTUS

<400> 7

Tyr Phe Ser Gly Ala Leu Pro Asp Asp Glu Asp Ala Gly Gly Leu Glu
1 5 10 15

Gln Asp Ser Asp Phe Glu Leu Ser Gly Ser Gly Asp Leu Asp Asp Thr
20 25 30

Glu Glu Pro Arg Thr Phe Pro Glu Val Ile Ser Pro
35 40

<210> 8
<211> 357
<212> PRT
<213> HAMSTER SP

<400> 8

```
Pro Arg Ala Leu Leu Ser Arg Pro Cys Gly Thr Lys Met Pro Ala Gln
1               5                  10                  15

Leu Arg Gly Ile Ala Val Leu Leu Leu Leu Leu Ser Ala Arg Ala Ala
            20                  25                  30

Leu Ala Gln Pro Trp Arg Asn Glu Asn Tyr Glu Arg Pro Val Asp Leu
        35                  40                  45

Glu Gly Ser Gly Asp Asp Asp Pro Phe Gly Asp Asp Glu Leu Asp Asp
    50                  55                  60

Ala Tyr Ser Gly Ser Gly Ser Gly Tyr Phe Glu Gln Glu Ser Gly Leu
65                  70                  75                  80

Glu Thr Ala Val Ser Leu Thr Thr Asp Thr Ser Val Pro Leu Pro Thr
                85                  90                  95

Thr Val Ala Val Leu Pro Val Thr Leu Val Gln Pro Met Ala Thr Pro
            100                 105                 110

Phe Glu Leu Phe Pro Thr Glu Asp Thr Ser Pro Glu Gln Thr Thr Ser
        115                 120                 125

Val Leu Tyr Ile Pro Lys Ile Thr Glu Ala Pro Val Ile Pro Ser Trp
    130                 135                 140

Lys Thr Thr Thr Ala Ser Thr Thr Ala Ser Asp Ser Pro Ser Thr Thr
145                 150                 155                 160

Ser Thr Thr Thr Thr Thr Ala Ala Thr Thr Thr Thr Thr Thr Thr Thr
                165                 170                 175

Ile Ser Thr Thr Val Ala Thr Ser Lys Pro Thr Thr Thr Gln Arg Phe
            180                 185                 190

Leu Pro Pro Phe Val Thr Lys Ala Ala Thr Thr Arg Ala Thr Thr Leu
        195                 200                 205

Glu Thr Pro Thr Thr Ser Ile Pro Glu Thr Ser Val Leu Thr Glu Val
    210                 215                 220

Thr Thr Ser Arg Leu Val Pro Ser Ser Thr Ala Lys Pro Arg Ser Leu
225                 230                 235                 240

Pro Lys Pro Ser Thr Ser Arg Thr Ala Glu Pro Thr Glu Lys Ser Thr
                245                 250                 255

Ala Leu Pro Ser Ser Pro Thr Thr Leu Pro Pro Thr Glu Ala Pro Gln
            260                 265                 270

Val Glu Pro Gly Glu Leu Thr Thr Val Leu Asp Ser Asp Leu Glu Val
        275                 280                 285

Pro Thr Ser Ser Gly Pro Ser Gly Asp Phe Glu Ile Gln Glu Glu Glu
```

290 295 300

Glu Thr Thr Arg Pro Glu Leu Gly Asn Glu Val Val Ala Val Val Thr
305 310 315 320

Pro Pro Ala Ala Pro Gly Leu Gly Leu Asn Ala Glu Pro Gly Leu Ile
325 330 335

Asp Asn Thr Ile Glu Ser Gly Ser Ser Ala Ala Gln Leu Pro Gln Lys
340 345 350

Asn Ile Leu Glu Arg
355

<210> 9
<211> 123
<212> PRT
<213> HOMO SAPIENS

<400> 9

Arg Ala Glu Leu Thr Ser Asp Lys Asp Lys Asp Met Tyr Leu Asp Asn
1 5 10 15

Ser Ser Ile Glu Glu Ala Ser Gly Val Tyr Pro Ile Asp Asp Asp Asp
20 25 30

Tyr Ala Ser Ala Ser Gly Ser Gly Ala Asp Glu Asp Val Glu Ser Pro
35 40 45

Glu Leu Thr Thr Thr Arg Pro Leu Pro Lys Ile Leu Leu Thr Ser Ala
50 55 60

Ala Pro Lys Val Glu Thr Thr Thr Leu Asn Ile Gln Asn Lys Ile Pro
65 70 75 80

Ala Gln Thr Lys Ser Pro Glu Glu Thr Asp Lys Glu Lys Val Asn Leu
85 90 95

Ser Asp Ser Glu Arg Lys Met Asp Pro Ala Glu Glu Asp Thr Asn Val
100 105 110

Tyr Thr Glu Lys His Ser Asp Ser Leu Phe Lys
115 120

<210> 10
<211> 43
<212> PRT
<213> RATTUS RATTUS

<400> 10

Asp Met Tyr Leu Asp Ser Ser Ser Ile Glu Glu Ala Ser Gly Leu Tyr
1 5 10 15

Pro Ile Asp Asp Asp Asp Tyr Ser Ser Ala Ser Gly Ser Gly Ala Tyr
20 25 30

Glu Asp Lys Gly Ser Pro Asp Leu Thr Thr Ser
35 40

<210> 11
<211> 43

<212> PRT
<213> MUS SP

<400> 11

Asp Met Tyr Leu Asp Asn Ser Ser Ile Glu Glu Ala Ser Gly Val Tyr
1 5 10 15

Pro Ile Asp Asp Asp Asp Tyr Ser Ser Ala Ser Gly Ser Gly Ala Asp
20 25 30

Glu Asp Ile Glu Ser Pro Val Leu Thr Thr Ser
35 40

<210> 12
<211> 42
<212> PRT
<213> RANA SP

<400> 12

Tyr Ile Asp Ser Thr Glu Ser Ser Gly Asn Tyr Pro Val Asp Asp Asp
1 5 10 15

Asp Tyr Ser Ser Gly Ser Gly Ser Gly Ile Pro Ala Arg Gly Asp Asp
20 25 30

Glu Asp Glu Asn Val Val Leu Thr Thr Val
35 40

<210> 13
<211> 10
<212> PRT
<213> HOMO SAPIEN

<220>
<221> Xaa
<222> (2)..(2)
<223> Xaa at position 2 if present, represents Asn, Asp, or Ile

<220>
<221> Xaa
<222> (3)..(3)
<223> Xaa at position 3 represents Phe or Tyr

<220>
<221> Xaa
<222> (4)..(4)
<223> Xaa at position 4 if present, represents Glu, Ser, or Ala

<220>
<221> Xaa
<222> (5)..(5)
<223> Xaa at position 5 if present, represents Leu, Gly, or Ser

<220>
<221> Xaa
<222> (6)..(6)
<223> Xaa at position 6 if present, represents Ala, or Gly

<400> 13

Asp Xaa Xaa Xaa Xaa Xaa Ser Gly Ser Gly

1 5 10

<210> 14
<211> 10
<212> PRT
<213> HOMO SAPIEN

<220>
<221> Xaa
<222> (1)..(1)
<223> Xaa at position 1 represents an amino acid having an acidic sidechain

<220>
<221> Xaa
<222> (2)..(2)
<223> Xaa at position 2 if present, represents Asn, Gln, Asp, Glu, Gly, Ala, Val, Ile, Leu, Ser, or Thr

<220>
<221> Xaa
<222> (3)..(3)
<223> Xaa at position 3 if present, represents Phe, Tyr, Trp, Leu, or Ile

<220>
<221> Xaa
<222> (4)..(4)
<223> Xaa at position 4 if present, represents Asp, Glu, Gly, Ala, Val, Ile, Leu, Ser, or Thr

<220>
<221> Xaa
<222> (5)..(5)
<223> Xaa at position 5 if present, represents Gly, Ala, Val, Ile, Leu, Ser, or Thr

<220>
<221> Xaa
<222> (6)..(6)
<223> Xaa at position 6 if present, represents Gly, Ala, Val, Ile, Leu, Ser, or Thr

<400> 14

Xaa Xaa Xaa Xaa Xaa Xaa Ser Gly Ser Gly
1 5 10

<210> 15
<211> 28
<212> PRT
<213> HOMO SAPIEN

<220>
<221> Xaa
<222> (4)..(4)
<223> Xaa at position 4 if present, represents Gly, Ala, Val, Leu, Ile, Cys, Ser, or Thr

<220>
<221> Xaa
<222> (5)..(5)
<223> Xaa at position 5 represents Gly, Ala, Val, Leu, Ile, Cys, Ser or Thr

<220>

<221> Xaa
<222> (7)..(7)
<223> Xaa at position 7 represents Gly, Ala, Val, Leu or Ile

<220>
<221> Xaa
<222> (27)..(27)
<223> Xaa at position 27 represents Gly, Ala, Val, Leu, Ile, Cys, Ser or Thr

<400> 15

Gln Ile Val Xaa Xaa Asn Xaa Pro Pro Glu Asp Gln Asp Gly Ser Gly
1 5 10 15

Asp Asp Ser Asp Asn Phe Ser Gly Ser Gly Xaa Gly
20 25

<210> 16
<211> 60
<212> PRT
<213> MUS SP

<220>
<221> Xaa
<222> (4)..(4)
<223> Xaa at position 4 if present, represents Gly, Ala, Val, Leu, Ile, Cys, Ser, or Thr

<220>
<221> Xaa
<222> (5)..(5)
<223> Xaa at position 5 represents Gly, Ala, Val, Leu, Ile, Cys, Ser or Thr

<220>
<221> Xaa
<222> (7)..(7)
<223> Xaa at position 7 represents Gly, Ala, Val, Leu or Ile

<220>
<221> Xaa
<222> (27)..(27)
<223> Xaa at position 27 represents Gly, Ala, Val, Leu, Ile, Cys, Ser or Thr

<220>
<221> Xaa
<222> (31)..(31)
<223> Xaa at position 31 represents Pro, Gln or Asn

<220>
<221> Xaa
<222> (33)..(33)
<223> Xaa at position 33 if present, represents Ala, Val, Leu, Ile, or Met

<220>
<221> Xaa
<222> (37)..(37)
<223> Xaa at position 37 represents Arg or Gln

<220>
<221> Xaa
<222> (39)..(39)
<223> Xaa at position 39 represents Gly, Ala, Val, Leu, Ile, Thr or Ser

<220>
<221> Xaa
<222> (40)..(40)
<223> Xaa at position 40 represents Pro, Ser or Thr

<220>
<221> Xaa
<222> (41)..(41)
<223> Xaa at position 41 represents Pro, Ser or Thr

<220>
<221> Xaa
<222> (43)..(43)
<223> Xaa at position 43 represents Ile, Leu, Phe, Tyr, or Trp

<220>
<221> Xaa
<222> (46)..(46)
<223> Xaa at position 46 represents Gly, Ala, Val, Ile, Leu, Ser or Thr

<220>
<221> Xaa
<222> (47)..(47)
<223> Xaa at position 47 represents Trp, Phe, Tyr, Gln or Asn

<220>
<221> Xaa
<222> (52)..(52)
<223> Xaa at position 52 represents Ala, Val, Leu, Ile, Thr or Ser

<220>
<221> Xaa
<222> (55)..(55)
<223> Xaa at position 55 represents Gly, Ala, Val, Leu, Ile, Ser or Thr

<220>
<221> Xaa
<222> (60)..(60)
<223> Xaa at position 60 represents Gly, Ala, Val, Leu, Ile, Thr or Ser

<400> 16

```
Gln Ile Val Xaa Xaa Asn Xaa Pro Pro Glu Asp Gln Asp Gly Ser Gly
1               5                   10                  15

Asp Asp Ser Asp Asn Phe Ser Gly Ser Gly Xaa Gly Ala Leu Xaa Asp
            20                  25                  30

Xaa Thr Leu Ser Xaa Gln Xaa Xaa Xaa Thr Xaa Lys Asp Xaa Xaa Leu
        35                  40                  45

Leu Thr Ala Xaa Pro Thr Xaa Pro Glu Pro Thr Xaa
    50                  55                  60
```

<210> 17
<211> 21
<212> DNA
<213> MUS SP

<400> 17
gacaacttct ctggctctgg c 21

<210> 18
<211> 21
<212> DNA
<213> MUS SP

<400> 18
gccagagcca gagaagttgt c 21

<210> 19
<211> 14
<212> DNA
<213> MUS SP

<220>
<221> n
<222> (3)..(3)
<223> n at position 3 represents A, T, C or G

<220>
<221> n
<222> (6)..(6)
<223> n at position 6 represents A, T, C or G

<220>
<221> n
<222> (12)..(12)
<223> n at position 12 represents A, T, C or G

<400> 19
ganggntctg gnga 14

<210> 20
<211> 14
<212> DNA
<213> MUS SP

<220>
<221> n
<222> (3)..(3)
<223> n at position 3 represents A, T, C or G

<220>
<221> n
<222> (9)..(9)
<223> n at position 9 represents A, T, C or G

<220>
<221> n
<222> (12)..(12)
<223> n at position 12 represents A, T, C or G

<400> 20
tcnccaganc cntc 14

<210> 21
<211> 33
<212> DNA
<213> MUS SP

<400> 21

taccggatga agaagaagga cgaaggcagc tac 33

<210> 22
<211> 33
<212> DNA
<213> MUS SP

<400> 22
atggcctact tcttcttcct gcttccgtcg atg 33

<210> 23
<211> 12
<212> DNA
<213> MUS SP

<400> 23
gagttctacg cc 12

<210> 24
<211> 12
<212> DNA
<213> MUS SP

<400> 24
ggcgtagaac tc 12

<210> 25
<211> 20
<212> DNA
<213> MUS SP

<400> 25
ctaagcttat ccacgaagcc 20

<210> 26
<211> 48
<212> DNA
<213> MUS SP

<400> 26
gccggatcct cagtgatggt ggtgatggtg gtccaaaagg ctctgaga 48

<210> 27
<211> 45
<212> DNA
<213> MUS SP

<400> 27
gccggatcct cagtgatggt ggtgatggtg gtcaggttga ccagg 45

<210> 28
<211> 45
<212> DNA
<213> MUS SP

<400> 28

gccggatcct cagtgatggt ggtgatggtg gagcacaggc tctcc 45

<210> 29
<211> 47
<212> DNA
<213> MUS SP

<400> 29
gccggatcct cagtgatggt ggtgatggtg gctggtgggc tctggag 47

<210> 30
<211> 27
<212> DNA
<213> MUS SP

<400> 30
tgtgccagcg ccagcgaagt tgtcaga 27

<210> 31
<211> 21
<212> DNA
<213> MUS SP

<400> 31
ctggcgctgg cacaggtgct t 21

<210> 32
<211> 18
<212> DNA
<213> MUS SP

<400> 32
cgccatcctg atcttcag 18

<210> 33
<211> 19
<212> DNA
<213> MUS SP

<400> 33
caggatggcg ctggggatg 19

<210> 34
<211> 175
<212> PRT
<213> MUS SP;HOMO SAPIEN

<400> 34

Met Arg Arg Ala Ala Leu Trp Leu Trp Leu Cys Ala Leu Ala Leu Arg
1 5 10 15

Leu Gln Pro Ala Leu Pro Gln Ile Val Ala Val Asn Val Pro Pro Glu
20 25 30

Asp Gln Asp Gly Ser Gly Asp Asp Ser Asp Asn Phe Ser Gly Ser Gly
35 40 45

Thr Gly Ala Leu Pro Asp Thr Leu Ser Arg Gln Thr Pro Ser Thr Trp
50 55 60

Lys Asp Val Trp Leu Leu Thr Ala Thr Pro Thr Ala Pro Glu Pro Thr
65 70 75 80

Ser Val Ser Asp Val Pro Arg Asp Leu Glu Val Val Ala Ala Thr Pro
85 90 95

Thr Ser Leu Leu Ile Ser Trp Asp Ala Pro Ala Val Thr Val Arg Tyr
100 105 110

Tyr Arg Ile Thr Tyr Gly Glu Thr Gly Gly Asn Ser Pro Val Gln Glu
115 120 125

Phe Thr Val Pro Gly Ser Lys Ser Thr Ala Thr Ile Ser Gly Leu Lys
130 135 140

Pro Gly Val Asp Tyr Thr Ile Thr Val Tyr Ala Val Thr Gly Arg Gly
145 150 155 160

Asp Ser Pro Ala Ser Ser Lys Pro Ile Ser Ile Asn Tyr Arg Thr
165 170 175

<210> 35
<211> 30
<212> DNA
<213> MUS SP

<400> 35
atgtcgactg caaccggcaa ctcggatcca 30

<210> 36
<211> 24
<212> DNA
<213> MUS SP

<400> 36
ggctgcgctg gtgggctctg gagc 24

<210> 37
<211> 24
<212> DNA
<213> HOMO SAPIEN

<400> 37
accagcgcag ccgggagcat cacc 24

<210> 38
<211> 25
<212> DNA
<213> HOMO SAPIEN

<400> 38
ggctcgagaa gcttcactgg gtaac 25

<210> 39
<211> 235

<212> PRT
<213> MUS SP;HOMO SAPIEN

<400> 39

```
Met Arg Arg Ala Ala Leu Trp Leu Trp Leu Cys Ala Leu Ala Leu Arg
1               5                  10                  15

Leu Gln Pro Ala Leu Pro Gln Ile Val Ala Val Asn Val Pro Pro Glu
            20                  25                  30

Asp Gln Asp Gly Ser Gly Asp Asp Ser Asp Asn Phe Ser Gly Ser Gly
        35                  40                  45

Thr Gly Ala Leu Pro Asp Thr Leu Ser Arg Gln Thr Pro Ser Thr Trp
    50                  55                  60

Lys Asp Val Trp Leu Leu Thr Ala Thr Pro Thr Ala Pro Glu Pro Thr
65                  70                  75                  80

Ser Ala Ala Gly Ser Ile Thr Thr Leu Pro Ala Leu Pro Glu Asp Gly
                85                  90                  95

Gly Ser Gly Ala Phe Pro Pro Gly His Phe Lys Asp Pro Lys Arg Leu
            100                 105                 110

Tyr Cys Lys Asn Gly Gly Phe Phe Leu Arg Ile His Pro Asp Gly Arg
        115                 120                 125

Val Asp Gly Val Arg Glu Lys Ser Asp Pro His Ile Lys Leu Gln Leu
    130                 135                 140

Gln Ala Glu Glu Arg Gly Val Val Ser Ile Lys Gly Val Cys Ala Asn
145                 150                 155                 160

Arg Tyr Leu Ala Met Lys Glu Asp Gly Arg Leu Leu Ala Ser Lys Cys
                165                 170                 175

Val Thr Asp Glu Cys Phe Phe Phe Glu Arg Leu Glu Ser Asn Asn Tyr
            180                 185                 190

Asn Thr Tyr Arg Ser Arg Lys Tyr Thr Ser Trp Tyr Val Ala Leu Lys
        195                 200                 205

Arg Thr Gly Gln Tyr Lys Leu Gly Ser Lys Thr Gly Pro Gly Gln Lys
    210                 215                 220

Ala Ile Leu Phe Leu Pro Met Ser Ala Lys Ser
225                 230                 235
```

<210> 40
<211> 43
<212> DNA
<213> MUS SP;HOMO SAPIEN

<400> 40
gatggactct gacrwctwcr vwvktgsttc tggctctggc aca 43

<210> 41
<211> 15
<212> DNA
<213> MUS SP

<400> 41
agagtcatcc ccaga 15

<210> 42
<211> 15
<212> DNA
<213> MUS SP

<400> 42
acaggtgctt tgcca 15

<210> 43
<211> 21
<212> DNA
<213> MUS SP

<400> 43
gccgaaagtt tattacatct g 21

<210> 44
<211> 15
<212> PRT
<213> MUS SP

<220>
<221> Xaa
<222> (1)..(1)
<223> Xaa at positions 1 represents Asp or Glu

<220>
<221> Xaa
<222> (2)..(2)
<223> Xaa at positions 2 if present, represents any amino acid

<220>
<221> Xaa
<222> (3)..(3)
<223> Xaa at position 3 if present, represents any amino acid

<220>
<221> Xaa
<222> (4)..(4)
<223> Xaa at position 4 if present, represents any amino acid

<220>
<221> Xaa
<222> (5)..(5)
<223> Xaa at position 5 if present, represents any amino acid

<220>
<221> Xaa
<222> (6)..(6)
<223> Xaa at position 6 if present, represents any amino acid

<220>
<221> Xaa
<222> (7)..(7)
<223> Xaa at position 7 if present, represents any amino acid

<220>
<221> Xaa
<222> (8)..(8)
<223> Xaa at position 8 if present, represents any amino acid

<220>
<221> Xaa
<222> (9)..(9)
<223> Xaa at position 9 if present, represents any amino acid

<220>
<221> Xaa
<222> (10)..(10)
<223> Xaa at position 10 if present, represents any amino acid

<220>
<221> Xaa
<222> (11)..(11)
<223> Xaa at position 11 if present, represents any amino acid

<400> 44

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Ser Gly Ser Gly
1 5 10 15

<210> 45
<211> 10
<212> PRT
<213> Drosophila sp.

<400> 45

Asp Pro Asp Tyr Ser Gly Ser Gly Phe Gly
1 5 10

<210> 46
<211> 5
<212> PRT
<213> MUS SP

<220>
<221> Xaa
<222> (1)..(1)
<223> Xaa at position 1 represents Asp or Glu

<220>
<221> Xaa
<222> (2)..(2)
<223> Xaa at position 2 represents Gly or any amino acid

<220>
<221> Xaa
<222> (5)..(5)
<223> Xaa at position 5 represents Asp or Glu

<400> 46

Xaa Xaa Ser Gly Xaa
1 5